Job Title: Magnet Instrumentation and Control Engineer IO0503

Req ID **1440** - Posted **22/06/2020** - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems** - **Extended Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure and cultural opportunity.

Application deadline: 02/08/2020
Domain: Construction
Department: Machine Construction
Division: Ex-Vessel Delivery & Assembly
Section: In-Cryostat, CTS & Auxiliaries
Job Family: Project Engineering
Job Role: Engineer - 1
Job Grade: P2
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

To be responsible for the testing and onsite assembly procedures of the Magnet system High Voltage (HV) measurement chains components.
To define the qualification of assembly procedures and relevant components, and HV chains from voltage taps to the electronics and the control software development.
To control the implementation of the special processes in HV insulation and testing for the Magnet assembly.

Background

The Magnet System is involved in the Plasma confinement and control and is made of 48 superconducting coils and modules. High Voltage measurement chains are required for the Magnet system protection; the related components have been specifically designed, developed and qualified for the ITER Magnet system. Today these components are in series production for most: this position targets the follow up of the corresponding procurement contracts, the contracting of the remaining contracts, the responsibility of the component on-site installation and the responsibility of the quench detection system development and qualification. This role reports to the In-Cryostat, CTS & Auxiliaries Section Leader;

Major Duties, Roles & Responsibilities

- Defines the HV qualification procedures and drives their execution in IO for the Magnet systems.
- Reports the HV acceptance tests in IO and supports any issue fixing if any.
- Be responsible for the Magnet grounding scheme.
- Designs and procures tooling for assembly and testing of the High Voltage instrumentation chain.
- Supports the instrumentation EWP production
- Ensures the production and update of cabling diagrams and 3D routing models; as well as assembly procedures, assembly technical specifications, quality control;
- During testing phase, identifies, resolves and reports non-conformance and deviations, implementing and following-up on corrective actions;
- Organizes and certification, and supervises the assembly and testing of related components;

- Be responsible for the operation of the HV test facilities in MIFI including the Quench Detection test facility.
- Manages technical documentation and maintains it up to date;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.

Measure of Effectiveness

- Completes contract management activities and ensures fixed project milestones are finalized on time and within the defined costs;
- Supervises the assembly drawings, models and procedures in a timely manner with the right quality at the milestones fixed by the project;
- Timely support to technical specifications & assembly procedures
- Ensures the Magnet High Voltage components are installed within defined timeframe.
- Properly manages the quality aspects in relation to HV tests

Experience & Profile

- *Professional Experience:*
  - At least 5 years' experience as instrumentation engineer, including control engineering in the field of HV instrumentation and Magnet systems.
- *Education:*
  - Master degree or equivalent in Electrical engineering field or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- *Language requirements:*
  - Fluent in English (written and spoken).
- *Technical experience and demonstrated competencies in:*
  - Contract management and execution: define needs and requirements, perform sourcing activities, preparation of tenders and award of contracts; monitor and manage all parties to ensure delivery and implementation of contractual requirements;
  - Quality assurance and control: knowledge of procedures to verify product compliance and requirements are met;
  - HV measurement chain component installation, insulation, and testing experience is required;
  - Management of field technicians, training and certifications;
  - Knowledge of / or experience in quench detection and protection in superconducting magnets systems will be an advantage;
  - Experience of onsite supervision or quality control of HV component installation will be an advantage.
- *Behavioral Competencies:*
  - Collaborate: Ability to dialogue with a wide variety of contributors and stakeholders;
  - Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
  - Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
  - Manage Complexity: Ability to analyze multiple and diverse sources of information to understand problems accurately before moving to proposals/solutions;
  - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

The following important information shall apply to all jobs at ITER Organization:

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;

- ITER Core technical competencies of 1) Nuclear Safety, environment, **r**adioprotection and pressured equipment 2) Occupational Health, safety & security 3) Quality assurance processes. Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by lline management and that may jeopardize the achievement of the Project’s objectives.